United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Field Office
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Concord, New Hampshire 03301-5087

September 30, 2003

Susan Svirsky
US EPA - OSRR
1 Congress Street
Boston, MA 02114

Dear Ms. Svirsky,

Thank you for the opportunity to review the Ecological Risk Assessment for the General Electric (GE)/Housatonic River Site, Rest of River, July 2003, as prepared by Weston Solutions for the US EPA and the US ACOE. The following are brief summary comments regarding the major issues presented in the ERA:

We recognize and commend EPA, ACOE and all associated contractors for completion of a very complex, and challenging ERA. The ERA represents the compilation and analysis of an enormous amount of data from field and lab studies conducted over the last several years. Extensive probabilistic and food chain modeling were also conducted to augment site-specific studies and provide a more comprehensive picture of potential risks and uncertainties.

PCB heterogeneity, congener distribution and weathering processes in abiotic and biotic media in the Housatonic River system inherently complicate the evaluation of the potential exposure and effects of PCBs. Consistent with many risk assessments, not all of the studies conducted supported a finding of significant risk from PCBs. Additionally, some studies evidenced effects that were not completely aligned with effects produced in other studies, relative to PCB concentrations. However, the number and scope of investigations conducted in support of the ERA provide a relatively comprehensive picture of potential risk. Individual studies, with a wide range of taxonomic representation, involved multi-level assessments. The literature-based deterministic and probabilistic modeling generated hazard quotients and probability distributions that allowed for comparison to or incorporation of site-specific data. The NOAEL/LOAEL effects benchmarks generated from these studies and models demonstrate pronounced effects or potential for effects in several taxonomic groups while other taxa appear to be less impacted based on gross measures such as survival or reproductive success. Evaluation of the magnitude and consistency of PCB concentrations throughout the Primary Study Area (PSA), relative to literature and

site-specific studies, infer that numerous acute and chronic impacts are probably occurring to a variety of biota, including and in addition to indicator species.

While it was not possible for EPA to investigate the effects of PCBs on every species or potential mode of biological action, numerous studies were conducted on select indicator organisms that were appropriate and representative of species assemblages found within the Housatonic River PSA. As stated in the ERA, individual species, even within similar taxa, may exhibit different toxic responses to PCBs based on their Ah-mediating mechanisms and cytochrome P450 capacity. EPA addressed the potential for impacts to species assemblages similar to indicator species through comparison of foraging behavior, dietary composition, home ranges and body weights. In most cases, associated species were also found to be at potential risk though species-specific physiologic mechanisms for PCB disposition are unknown for most species. Based on literature studies of surrogate species, we believe that the risk potential is high and may be even more pronounced in species other the indicator species selected for the ERA.

EPA conducted numerous traditional and non-traditional assessment studies to evaluate gross changes in community structure, specific toxic responses and survival/reproductive success. However, genetic, immunological, histological, endocrinological and behavioral impact studies across taxa were not consistently included in the ERA. Literature-based studies infer that numerous mammalian, avian and aquatic species may be exhibiting PCB-induced toxic responses in these more basic physiological functions within the Housatonic PSA. In many cases, these potentially chronic impacts would not be discernible in relatively short-term survival and reproduction studies. DNA adduct formation and oxidative DNA damage, compromised immune systems, cellular dysfunction, endocrine disruption, and courtship/parental disruption are a few of the potential effects expected to impact site-specific species. These chronic impacts could potentially alter the gene pool, promote carcinogenicity, allow for reduced plasticity of individuals and populations, and impact reproductive success. We realize that many of these potential effects would have required more involved long-term studies and been challenging to interpret, relative to assessment endpoints.

In summary, EPA's Weight of Evidence approach incorporates a wide variety of studies and modeling in a representative and comprehensive manner. The findings of the ERA, in conjunction with the issues mentioned above, clearly show that substantial and extensive impacts are occurring to a variety of species within portions of the PSA. After the Peer Review process and public comment period are completed, we look forward to the finalization of the ERA and the next steps in the remedial process.

For further comments or questions concerning our comments, please contact Kenneth Munney at 603-223-2541, ext.19 or Kenneth_Munney @fws.gov .

Sincerely,

Kenneth C. Carr
Acting Supervisor